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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/735,114	12/12/2003	ChiaHua Ho	MXICP024	1904

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EXAMINER	
LE, THONG QUOC	

ART UNIT	PAPER NUMBER
2827	

DATE MAILED: 08/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/735,114	HO ET AL.	
	Examiner	Art Unit	
	Thong Q. Le	2827	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 May 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,5-11,13-20* is/are rejected.

7)☒ Claim(s) *4 and 12* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-20 are presented for examination.

Response to Arguments

2. Applicant's arguments with respect to claims 1-20 have been considered but are moot in view of the new ground(s) of rejection.

Claim Objections

3. Regarding claims 2-10, 17-20 line 1, should be changed "A MRAM" to –The MRAM--.

Regarding claim 12-15, line 1, should be changed "A method" to –The method--.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000.

Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

5. Claims 1-3, 6-11,13-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Swanson et al. (U.S. Patent No. 6,538,918).

Regarding claims 1, 16, Swanson et al. disclose a magnetic random access memory (MRAM) cell (Figure 1), comprising a word line (Figure 1, 19) ; a bit line (Figure 1, 10) perpendicular to the word line; a magnetic device (Figure 1, 18) disposed at an intersection of the word line and the bit line (Figure 1), the magnetic device having a first end and a second end (Figure 1, 16) , and a pair of writing magnets (Figure 1, 16), one of the pair of writing magnets disposed opposite the first end of the magnetic device and separated from the first end of the magnetic device by an insulator, another of the pair of writing magnets disposed opposite the second end of the magnetic device and separated from the second end of the magnetic device by an insulator, wherein the pair of writing magnets switches a magnetic alignment of the magnetic device during a write operation (Column 2, lines 9-17, two of writing magnets 16 located two ends, and separated by insulator 18).

Regarding claims 2-3, 6-10, 13-15,17-18, Swanson et al. disclose wherein a current in the word line and the bit line generates a magnetic field on the pair of writing magnets during the write operation (Column 2, lines 40-57), and wherein the pair of writing magnets and the magnetic device are aligned along a long axis of the memory cell (Figure 1), and wherein the magnetic device includes a GMR, CMR, AMR material

(ABSTRACT, Figure 4, 112a), and writing magnet includes a soft or a general ferromagnetic material (Column 1, lines 15-20).

Claims 11, 19-20, Swanson et al. disclose a method for performing a write operation to a magnetic random access memory (MRAM) cell, comprising the operations of: supplying a current to a word line and a bit line of the MRAM cell; generating a magnetic field using the currents in the word line and the bit line, wherein the magnetic field is applied to a pair of writing magnets disposed at either end of a magnetic device, and generating a field strength using the writing magnets, the field strength capable of switching a magnetic alignment of the magnetic device (Column 2, lines 40-57), and wherein a current in a particular word line and a current in a particular bit line generates a magnetic field on a pair of writing magnets during the write operation (Column 2, lines 40-57), and wherein teach intersection of a word line and a bit line includes a pair of writing magnetic device that are aligned along a long axis of memory cell formed at the intersection (Figure 1).

6. Claims 1-3, 6-11,13-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Ho (Pub. U.S. Patent No. 2005/0105328).

Regarding claims 1, 16, Ho discloses a magnetic random access memory (MRAM) cell (Figure 2), comprising a word line (Figure 2, 204) ; a bit line (Figure 1, 202) perpendicular to the word line (Figure 2); a magnetic device (Figure 1, 106) disposed at an intersection of the word line and the bit line (Figure 2), the magnetic device having a first end and a second end (Figure 1, 102, Figure 10) , and a pair of writing magnets (Figure 1, 102, Figure 10), one of the pair of writing magnets disposed opposite the first

end of the magnetic device and separated from the first end of the magnetic device by an insulator, another of the pair of writing magnets disposed opposite the second end of the magnetic device and separated from the second end of the magnetic device by an insulator, wherein the pair of writing magnets switches a magnetic alignment of the magnetic device during a write operation (0041).

Regarding claims 2, 5-10, 13-15,17-18, Ho discloses wherein a current in the word line and the bit line generates a magnetic field on the pair of writing magnets during the write operation (ABSTRACT), and wherein the magnetic device includes a MJT, GMR, CMR, AMR material (ABSTRACT, Figure 4, 112a), and writing magnet includes a soft or a general ferromagnetic material (ABSTRACT, [0005], [0042]).

Claims 11, 19, Ho disclose a method for performing a write operation to a magnetic random access memory (MRAM) cell, comprising the operations of: supplying a current to a word line and a bit line of the MRAM cell; generating a magnetic field using the currents in the word line and the bit line, wherein the magnetic field is applied to a pair of writing magnets disposed at either end of a magnetic device, and generating a field strength using the writing magnets, the field strength capable of switching a magnetic alignment of the magnetic device ([0041]), and wherein a current in a particular word line and a current in a particular bit line generates a magnetic field on a pair of writing magnets during the write operation (ABSTRACT).

Regarding to present invention the magnetic device make less than 90 degree with bit line or word line. In reference Ho 2005/0105328, magnetic device is 90 degrees

with word line or bit line. This is a only difference between present application and Ho's reference.

Allowable Subject Matter

7. Claims 4, 12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 4,12 include allowable subject matter since the prior art made of record and considered pertinent to the applicant's disclosure does not teach or suggest the claimed limitations. Swanson et al. (U.S. Patent No. 6,538,918), Ho (Pub. U.S. Patent No. 2005/0105328), and others, does not teach the claimed invention having wherein the long axis of the memory cell is not aligned with the word line and the long axis is not aligned with the bit line as claim 4 disclosed, and wherein the current applied to the word line and the bit line is on an order of magnitude of 100mA as claims 12 disclosed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thong Q. Le whose telephone number is 571-272-1783. The examiner can normally be reached on 8:00am-5:00pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Zarabian Amir can be reached on 571-272-1852. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Thong Q. Le
Primary Examiner
Art Unit 2827

8/03/2006